

The invention also comprises a method for determining the temperature of the transducer without the use of a temperature sensor, or the like. The method of the invention is achieved by sweeping across a broad frequency range which contains resonant and non-resonant frequencies where C_0 can be measured. A pre-defined frequency range is set independently of the resonance frequency of a specific transducer/blade combination. C_0 of the transducer/blade is measured at several different frequencies within the pre-defined frequency range to ensure that invalid C_0 measurements are disregarded, and the temperature of the transducer is calculated based on valid C_0 measurements.